

ANNIVERSARY OF AMERICAN COMMERCE

Tercentenary of the Building of the "Virginia",
the First Ship Constructed on the Western
Continent - Centennial of the "Clermont", First
Steamboat in the World - The Rise of the American
Merchant Marine & the Development of a Century
of Navigation since Robert Fulton

by C. Seymour Bullock

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Fulton & "Clermont"

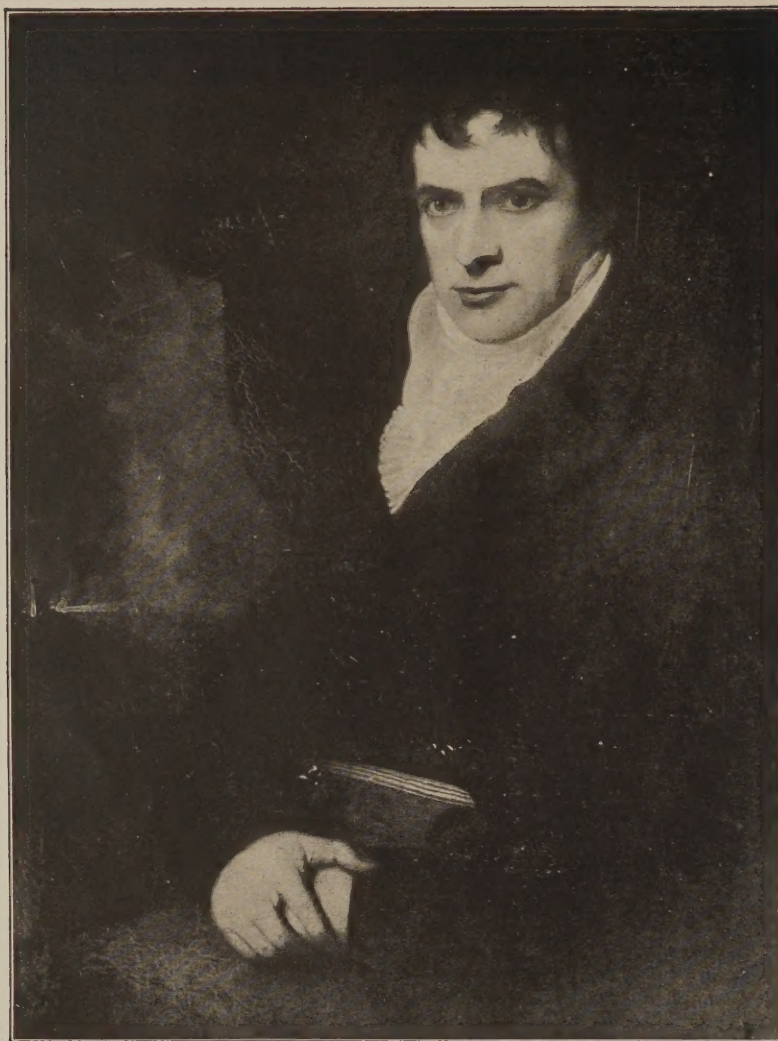
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ROBERT FULTON, THE FATHER OF STEAM NAVIGATION
Painting by his intimate friend and fellow-artist, Benjamin West—Original
now in the possession of Fulton's grandson, Robert Fulton Ludlow, of
Claverack, New York — Centenary reproduction in the Journal of American
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The Journal of American History

Relating Life Stories of Men and
Events that have entered into the
Building of the Western Continent

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Anniversary of American Commerce

Ter-Centenary

of the Building of the

"Virginia," the First Ship Constructed

on the Western Continent & Centennial of the "Clermont,"

First Steamboat in the World & The Rise of the American Merchant

Marine and the Development of a Century of Navigation since Robert Fulton

BY

C. SEYMOUR BULLOCK

AUTHOR OF "THE MIRACLE OF THE FIRST STEAMBOAT," "FIRST STEAMSHIPS TO CROSS THE OCEAN," AND A
RECOGNIZED AUTHORITY ON THE SUBJECT OF STEAM NAVIGATION

THIS is the three hundredth anniversary of the building of the first ship on the American continent, and the one hundredth anniversary of the first practical steamboat in the world. The former will be observed in Maine where the little two-masted bark, "Virginia," was built on the Kennebec river in 1607—the birth of the American merchant marine. The latter will be celebrated throughout the civilized world, receiving special recognition in France and America.

The Americans are preparing to pay the tribute of a loving people to one of their own fellowmen who gave to all races and all nations the secret of the world's material progress, commerce. When the "Clermont" steamed up the Hudson river on that day in August, 1807, the people laughed it to scorn as "Fulton's Folly." The legislature could not be impressed with the sincerity of its promoters and ridiculed the petitions for exclusive right of navigating steam vessels in the waters of New York.

A few days ago, one hundred years having intervened, the legislators of this same commonwealth conferred a rich grant at the gate of the Western Continent, covering two blocks in the

harbor of the American metropolis, extending from One Hundred and Fourteenth street to One Hundred and Eighteenth street, New York, and extending to a depth of forty feet in the Hudson river. Here will be constructed a water-gate, through which all the ships of the world may approach, a magnificent memorial to the memory of Robert Fulton—a treasure-house of all that pertains to steam navigation, containing a museum and reception hall. The relatives of Robert Fulton have granted permission to remove his remains from the present resting-place in the Livingston vault in Trinity churchyard to this place of state overlooking the river which he loved and on which he endowed mankind with his genius.

One hundred years ago this struggling inventor roamed two continents to find a few paltry dollars with which to improve the navigation of the seas and revolutionize the world's trade. To-day more than a half million dollars are willingly and lovingly offered as tribute to his memory by a grateful people. It is the wonderful story of his struggles that is here told, taking one back through the century to the man himself and that August day when the world was awakened from its slumbers by the dawn of a new epoch.

1607—Ter-Centenary of American Commerce

THE world absolutely refused to accept the theory that ships could be propelled against wind and tide by a subtle power known as steam. The men who tried to persuade the people of several nations to give them an opportunity to prove it is a list of fatalities—of tragedies. Jonathan Hulls, the Englishman, and John Fitch and James Rumsey, Americans, offered the great secret to their fellowmen only to receive their rebuffs and ridicule. Other men with ideas founded upon the theories of these first martyrs to invention stepped into the same pit of public disapproval until at last there came one, Robert Fulton, a persistent, prodigious, indomitable man, who forced the world to listen. It is on this hundredth anniversary of his achievement that I ask the respectful hearing of all Americans.

Wearied with his uneven fight against the prejudices and the indifference of a world to whose service he had thought to bridle the very waters of the sea, John Fitch had retired to his lands in Kentucky and there, after an illness of many weeks, died. A short time before his death he wrote to Dr. William Thornton, whose friendship for Fitch and confidence in the practicability of his ideas seems never to have wavered, the following pathetic letter:

BARDSTOWN, NELSON COUNTY, 1ST, FEBY,
1798.

"MY WORTHY FRIEND

I am going fast to my mother clay. Yesterday I executed my last will which I ever mean to make. My property hear will be much more than I ever expected. . . . Address letter for me to Mr. John Rowan, Bardstown. If I am hear I can pay the postage, if not he will have enough in his hands. I shall transact no more business of myself but leave it altogether to him.

my worthy friend I have many more things to inform you and Mr. Vail but being fatigued shall only say

that I am
and shall die
a friend to both of you
JOHN FITCH

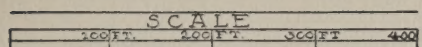
DR. WILLIAM THORNTON, ESQ.

P S if possible let me receive one letter more from you J F"

Fitch had but recently returned from his fruitless trip to England and France, where it was hoped to build a larger boat than any that had been attempted on the Delaware, but France had just put to her best life the knife of suicide and the people were too busy thinking out schemes for getting rid of one another to concern themselves in the plans of any stranger with a project for utilizing the untried force of steam. After a brief stay with the United States' Minister Vail at L'Orient, Fitch, in spite of his earlier leanings toward skepticism, turned his back upon the people who were wearing miniature guillotines about the neck just as beauty now adorns itself with chain and locket, and started for London where he sought out his friend Leslie, of Philadelphia, through whom he was introduced to the Earl of Stanhope, one of the most eminent engineers of the day, and to William Symington, builder of the "Charlotte Dundas," England's first successful steamboat, which was launched in 1801 and used to tow boats upon the canal in 1802. It was laid aside after the death of the Duke of Bridgewater, which caused a lack of funds necessary to make changes so that the waves caused by the boat would not wash down the banks on either side. This was in 1793 and from this time dates the first correspondence between these early investigators and experimentors and Robert Fulton upon which it is thought to base a claim for priority of suggestion in the use of steam for navigation.

"Sir: I have received yours of the 30th of September, in which you propose to communicate to me the principles of an invention which you say you have discovered, respecting the moving of ships by means of steam. It is a subject on which I have made important discoveries. I shall be glad to receive the communication which you intend, as I have made the principles of mechanics my particular study." * * *

1807—Centennial of Steam Navigation—1907



CLERMONT, 1807, 133 FEET



CHANCELLOR LIVINGSTON, 1816, 154 FEET



ERIE, 1832, 180 FEET



ROCHESTER, 1836, 209 FEET



DANIEL DREW, 1860, 251 FEET



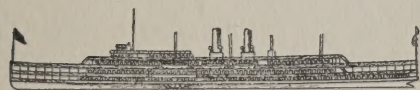
C. VIEBARD, 1864, 281 FEET



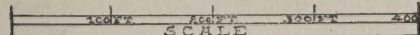
ALBANY, 1881, 325 FEET



NEW YORK, 1887, 350 FEET



HENDRICK HUDSON, 1906, 400 FEET



DESIGN BY "THE NAUTICAL GAZETTE,"
the Authoritative Journal of Navigation in America

When Fitch left France for England all the drawings and specifications that he had taken with him from

this country were left in the hands of the United States Minister, who had been a member of the original company for building steamboats on the Delaware with the hope that he would be able to interest the French engineers in the project after they had taken time to investigate it more fully. The flag, too, that Governor Mifflin of Pennsylvania had placed on the original boat was left with him. Later on these drawings were turned over to Chancellor Livingston, and became the basis for his more intelligent study of a theme to which he had already given considerable attention and in which he had made a number of fruitless experiments. The Chancellor then urged Fulton to take up the project of steamboats, which he seems to have dropped after his correspondence in 1793. In this he was seconded by Joel Barlow, who, after the expiration of his term of service as consul, had taken up his home in Paris. The flag was afterward given into the keeping of General Pinkney, then minister of the Court of St. James, and through him it came into the hands of Rufus King, his successor at the court, by whom it was returned to this country.

I have already written fully, in the pages of this most valued journal, of the pioneer John Fitch and would not abate one word of the praise given him, but I would not, even for his sake, take one leaf from the crown with which the years have honored Robert Fulton for his part in the development of that one force which, more than all others, has been potent in changing the trend of civilization. To Robert Fulton belongs the glory of having built and navigated the first steamboat on the Hudson, the boat from which has been developed those magnificent floating palaces, unequalled in grace of line, point of comfort, attainment of speed, or reliability of service by the water-craft of any other country in the world.

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Who was this man who rose from the multitude and opened the door of a new epoch, greater than the world could conceive, and the prophecy of which it repudiated as the folly of a dreamer? In searching through the British Records I find a Reverend Dr. Robert Fulton of Scotland, who was appointed by the Privy Council September 8, 1614, to serve as chaplain to the Lady Arabella Stuart, first cousin of King James the First of England. The Lady Arabella was at that time imprisoned in the Tower of London for having assisted her husband, William Seymour, afterward first Marquis of Hertford, in his escape to France.

There is romance and chivalry in this story that I would like to narrate, but I must here confine myself to that which relates only to the progenitor of commerce. In conversing a few days ago with the descendants of this Dr. Fulton, they assured me that the American genius of steam navigation is in lineal descent from this friend and spiritual adviser of the unfortunate Lady Stuart. Dr. Fulton settled in Kilkenny, Ireland, in the time of Cromwell and several of his descendants came to America. One of them, bearing his name, Robert, settled in Philadelphia. It is in this city at this same time that a tailor of the same name resided and it is claimed that he was the American heir of Dr. Fulton of Kilkenny.

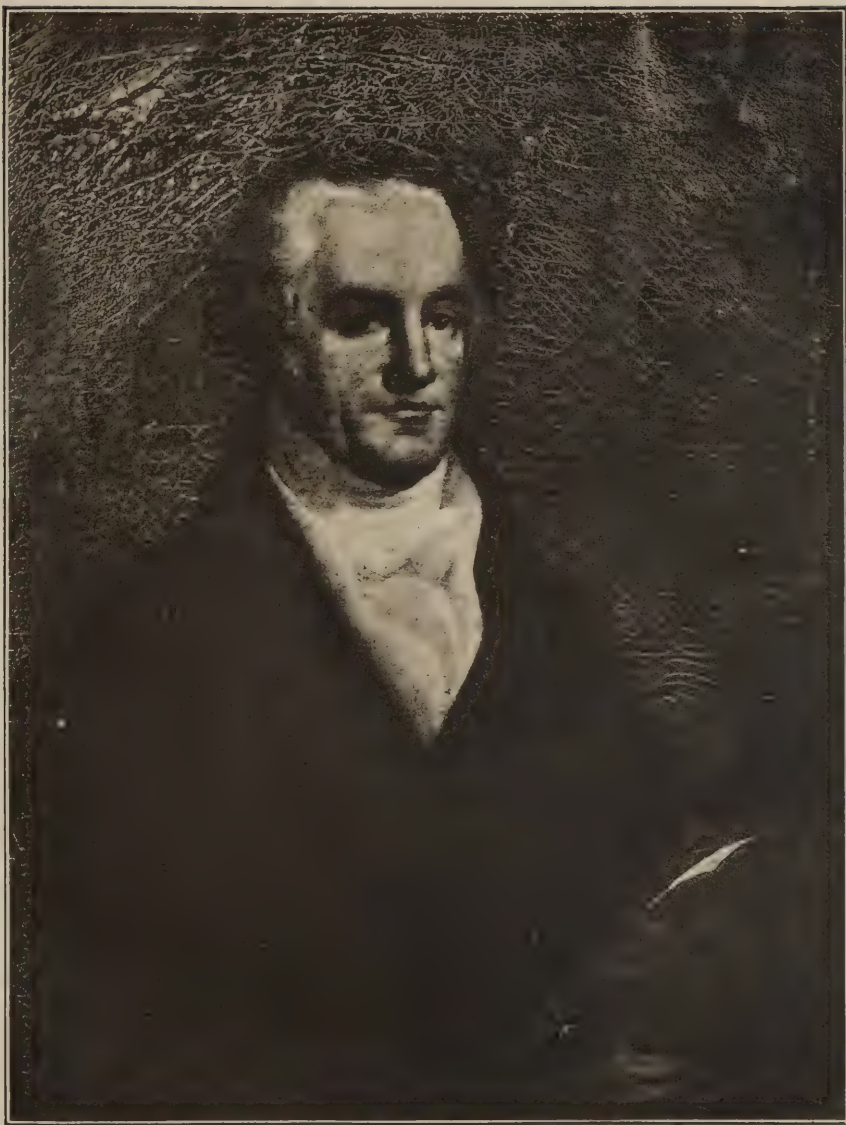
This Philadelphia tailor, who had married Mary Smith, by some of Fulton's biographers said to have been the daughter of a respected Pennsylvania family, and by others conceded to be an open question with no way of deciding whether or not the marriage occurred in Scotland, moved into Lancaster township, where, in 1759, they bought a home which was sold six years later, and on the same day they purchased a farm in Little Britain township. It was on this farm that Robert Fulton, destined to revolutionize the world's trade, was born in 1765.

Some of his biographers have said that the date of his birth was not recorded, but as I find it mentioned in one of his letters that he wanted to be with certain friends on the fourteenth of November, his "birthday," it is hard to see why there should be raised any question as to the date.

Two girls had already come to the Fulton home, and after the coming of Robert, another girl and a boy arrived to complete the family circle. In 1766, this farm was sold to the Swifts and the family once more moved back to Lancaster where the father died and was buried within the wall-encircled burying-ground near the little, old, limestone church that he had helped to build, helping also to organize its society, of which he was one of the deacons. Among the slender marble slabs and the crumbling red sandstone panels that marked the resting-places of the dead, all of which were removed a few years ago to make room for a new building, there probably stood one that told where the first of the Fulton family in America found a sleeping-place till the "morn breaketh and the shadows flee away."

The boy, Robert Fulton, mastered his "three R's" at home and then took up his other studies at a school kept by a Quaker in a building that stood on the northeast corner of East King street and the center "Square" in Lancaster. A schoolmate of those early days wrote:

"His mother was a widow in straitened circumstances. I had a brother who was fond of painting. The Revolutionary war made it difficult to obtain materials from abroad, and the arts were at a low ebb in the country. My brother consequently prepared and mixed colors for himself, which he usually displayed on mussel shells. His cast-off brushes and shells fell to my lot, some of which I occasionally carried to school. Fulton craved a part and I divided my treasure. He soon from this beginning so shamed my performance by his superiority, that I voluntarily surrendered the heirship of all that came into my possession. Henceforth his book was neglected and he was often severely chastised by the schoolmaster for his inatten-



PAINTING BY ROBERT FULTON

The subject is Fulton's fellow aesthete and utilitarian, Joel Barlow the poet and diplomat who was Fulton's most intimate friend when the inventor proposed to Napoleon the power of steam as a destroyer of the navies of the world but met with rebuff—Original is now in possession of the Barlow family in New York and a replica is owned by Fulton's grandson, Robert Fulton Ludlow of Claverack, New York

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tion. His friends removed him to Philadelphia where he was apprenticed to a silversmith; but his mind was not in his trade and in his eighteenth year he established himself as a painter in that city."

Fulton was apprenticed to a silversmith, and for some time followed that vocation. Later he turned to miniature painting and in 1785-6 when John Fitch put his first successful steamboat on the Delaware, Fulton had a studio at the corner of Second and Walnut streets, Philadelphia.

It was while returning to Philadelphia from a visit to his mother that he met at the warm springs of Pennsylvania the friends who chanced to see some of his paintings and advised him to go to London and complete his art studies under Benjamin West, who had already gained some celebrity and was then on the way to fame. Both Fulton and West were born in the wilds of Pennsylvania, and their fathers were well acquainted.

In speaking of this beginning of American art which seems to be contemporary with American commerce, I must say that had not Fulton's abilities been turned to more material things American art would have been the richer to-day. To some extent this is also true of his friend, West, who was tainted by patronage. Unfortunately for him and for the world, West became a favorite of George III, to whom he had been presented by the Archbishop of York, and painted, to the infinite satisfaction of the king, an almost endless list of historical and classical pictures—stiff, forced and formal, each a little lower in merit than the one that had preceded it, and all marking a line of sharp retrogression from the "Departure of Regulus" to the "Fall of Wolfe." Evidence of a new start when, after the illness of the king, he was thrown again upon his own resources and was once more free to follow his own inspirations, is shown in his "Christ Healing the Sick" and his "Death on the Pale Horse," which are still valued for more than respectable coloring and clever drawing. Through the ad-

mirable foresight of Robert Fulton, who purchased several of his choicest pieces, we now have in the United States the most praiseworthy of his productions.

Fulton was received with open arms by West and for several years was as one of the family in this delightful home. West painted a portrait of his friend, Fulton, which is possibly the height of his genius as a portrait painter. A few days ago, at the home of Fulton's grandson, Robert Fulton Ludlow, I looked upon the rich canvas, and felt the full power of these two strong men.

Fulton later spent two years in Devonshire, near Exeter, where he met the Duke of Bridgewater, famous for his interest in canals, and Lord Stanhope, celebrated for his love of science, especially along mechanical lines. It is claimed by some of his biographers that Fulton at this time met James Watt, the eminent engineer. But a letter from Joel Barlow to Dr. William Thornton, which is here printed for the first time, shows that this is not so. Dr. Thornton purposed visiting England. He had written Fitch (February 21, 1794):

"Let me advise you to get no steam engine made except by Watt and Boulton and with a copper boiler without any wood round it and very strong copper. It will never be a loss, for when worn out it will sell."

He now proposed a personal visit and wrote for a letter of introduction to which he was given the following answer:

DEAR SIR:

Mr. Fulton informs me that he does not know either Mr. Watt or Mr. Boulton, that when he purchased the Steam engine he dealt with their agent in London, which I now recollect was the case.

I should suppose that no letter of recommendation to them can be necessary for you—your name and character are too well known as a mechanician and architect, as well as for general science, that it is impossible it should be unknown to them.

Yr fd

servt

J. BARLOW.

TO DOCTOR THORNTON.

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However, Fulton had visited the works of Boulton and Watt, for in his diary, now in the possession of Mr. Robert Fulton Ludlow, his grandson, we find an entry as follows:

Feb'y the 5, 1804 travelling from London to Birmingham and back again to order the Steam Engine.....£8.0.0

Farther on we read:

Jan. 21, 1805 To Messrs Boulton Watt & Co. for cylinder and parts of the engine.....£548.0.0

March the 18th To Messrs Cave and Son for copper boiler weighing 4399 lbs, at 2s. 2d. the.....£476.11.2.

There is another entry in the diary that we must include with these, all of which now appears in print for the first time, as it throws light on the debated question as to how Fulton got the engine out of England. Under the date of March 22d, 1805, he writes:

Fee at the Treasury on receiving permission to ship the Engine to America.....£2, 14s, 6d

I have found few instances in the world's work where an intense artistic temperament is almost instantaneously transformed into practical mechanics. Fulton, however, either by foresight or intuition looked into the centuries and discerned the power that was to revolutionize the earth. When twenty-nine years of age, in 1794, he obtained a patent for a double inclined plane, to be used in connection with canals, and for several years thereafter he was actively engaged in projects for the improvement of inland navigation. In 1794, he submitted to the British Society for the Promotion of Arts and Commerce a new method for sawing marble, for which the society gave him a vote of thanks and an honorary medal, and some time later he patented devices for spinning flax and for making rope. Several contrivances for digging canals and aqueducts were brought out by him at this time, besides an iron bridge built upon new lines, and thereafter he proclaimed himself a civil engineer, under which title he produced his work on canals and published sev-

eral articles in the *London Morning Star*. In 1796, he published his "Treatise on the Improvement of Canal Navigation," copies of which were sent to the governor of Pennsylvania and to General George Washington, from whom he received a very flattering acknowledgment.

With a greater civilizer in his grasp than the planet had yet seen, the young inventor naturally turned toward the center of civilization. America was a struggling, bankrupt republic, experimenting with the theory of self-government. England was occupied with problems that involved her future as an empire. France, the gathering-place of art and letters and science, dreamed of days when she would be the diadem in the crown of the world's powers—when England and America and half the civilized globe would bow to her mandates. Like many another youth before and since, Fulton went to France to introduce his improvements in canal transportation. The French people had not been long enough freed from the madness in which they had thought to dethrone God by vote, and rule Him out of His own universe, to care much more for improvements in canals than they had previously cared for steam navigation when suggested by John Fitch. But when Fulton proposed a panorama, the first that had ever been seen in Paris, he was hailed as a public benefactor, for here was something that might deepen the dimple of a smile in which could be caught the tear of a never absent though repressed sorrow.

France will be France as long as the world lasts! The same versatile, blasé, gala-day nation that Napoleon wooed—this is the France that Fulton found—a people trying to forget the cares of life, ever willing to be entertained and eager to applaud. It brought him back to his first love—Art. He knelt again at her feet and worshiped. Aesthete that he was, psychologist that he must have been,

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he lifted the veil and beneath it he found the tear-stains and the laughing eyes still wet with weeping.

Life among the French so impressed Fulton that he turned to the study of political economy and published a treatise addressed to "The Friends of Mankind" in which he pointed out the effect that education and internal improvements must have upon the happiness of a nation. He wished not only for a free and speedy communication between the different parts of a large country, but a universal free trade between all nations. In one of his phrases he coined into beautiful English one of the most important truths ever expressed in literature: "The liberty of the seas will be the happiness of the earth." It was about this time that he met Joel Barlow, who had but recently returned from Algeria, to which country he had been appointed by Washington in 1795 to redeem the captives taken by pirates and to negotiate a treaty of peace. Barlow was not only a diplomat but a poet. He, too, had become imbued with the French spirit and was a rollicking litterateur, especially skilful with the mighty sword of satire. Withal, Barlow was well-balanced and he was as adept with the bludgeon of Mammon as he was with the needle point of literary irony.

He had succeeded. Reaching Paris, after some successful speculations that yielded large returns, he purchased the hotel of Count Clermont de Tonnerre where he lived as was becoming to his wealth. Fulton was introduced to him and in a few weeks became a member of his household as he had formerly been a member of West's home-circle in London and for a short time returned to his art, painting easel pictures. Here were two men of congenial minds and they at once began experimenting with a machine that Fulton devised for exploding a large quantity of gun-powder under water. It was the very thing that David Bushnell, of New London, Connecticut, had proposed when scarce

through his course at Yale College, twenty years before. With Bushnell it was a success—destroying one of the tenders of the British frigate "Cerberus" as it lay in Long Island Sound, but with Fulton and Barlow it was a failure. However, when the device was more perfectly worked out, Fulton appealed to the French Directory for aid and was at first given to understand that the aid sought would be forthcoming but later he was told that his plans had been totally rejected. Nothing daunted, Fulton prepared a model of his invention and when the kaleidoscope of the ever-changing French people again showed a new list of directors, he presented them with a memorial, seeking, a second time, their investigation. Another commission was appointed and after three months more of waiting Fulton was told that his plans had been again rejected.

But the hour-glass turned again. Napoleon was made First Consul. It was on the eve of his great dream when his mighty hand should sway the peoples of the earth and he should sit enthroned over the Old World with a New World as plaything to be tossed about at will and ultimately proclaimed as his own. Sporting with thrones and powers as a child plays with the petals of a broken flower, all men were to him but puppets and if this young visionist from the coveted America could be but an atom in the Great Scheme, Napoleon would give him heed. Fulton at once waited upon him and so won his interest that a committee was appointed from the Academy of Sciences to examine into the merits of the new invention. Upon their report a grant was made by which Fulton was enabled to put some of his ideas into actual practice.

In the spring of 1801 Fulton repaired to Brest where he experimented with a diving boat constructed the preceding winter, a crude affair as all first attempts must necessarily be, but the demonstration was pronounced a

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success and was so reported by the committee appointed to follow his experiments. Through July and August Fulton continued his work in a vain hope that some of the English ships just off the coast would come in near enough to allow him to show exactly what could be done in the way of destruction by a submarine mine. The sailing of the fleet carried with it Fulton's opportunity and the French officials refused to make any further advances for such a mode of warfare.

The British government had some intimation as to what Fulton was doing, and at the suggestion of the Earl of Stanhope, it was decided to induce him to leave France, if possible, and continue his investigations and experiments in England. The correspondence that followed had its desired effect and in May, 1804, Fulton arrived in London and was at once given an audience with Mr. Pitt and Lord Melville. Both men saw the value of such an engine of destruction and when, on October 15, 1805, Fulton blew up the strongly-built Danish brig of two hundred tons that had been provided for the occasion, there was no longer any question as to its possibilities. But the British government had no real intention of adopting his plans, it was rather a ruse to keep him from the service of France and when the purpose had fulfilled itself, Fulton was quietly allowed to drop out of their consideration. Here was a youth with a knowledge of a power that could cause the rise and fall of nations—a knowledge shared by other young Americans—but neither the foresight of a Napoleon nor the shrewdness of a Nelson could comprehend it.

Some of the correspondence that had passed between Fulton and the representatives of the French government seems to show that it was Fulton's plan to build a powerful steam-propelled boat that could tow barges upon which the French army could be loaded and ferried across the channel.

A still, calm night was to be chosen, when the fleet of Nelson would be powerless to interfere, and the invincible French were to land on the shores of England. Had such a project met with approval all the history of the last hundred years might have been written differently. If it had been possible, as is often claimed by Fulton biographers, for Napoleon to have seen from the isle of his banishment a steamship sailing against both wind and wave he must have realized the folly that led him to listen to the opinions of others and thrust from him the service of that potent force by which he might have changed the face of the then known world. But why deal in conjectures? The "Savannah" did not cross the ocean till 1819 and the "Royal William" did not sail upon her trans-Atlantic trip till more than twelve years had passed and it was seven years more before any other steamcraft ventured far from shore. It is not at all probable then, Fulton's biographers to the contrary, that Napoleon in his wisdom ever saw a steamship, for death came to bring him release in 1822, years before a steamship went near to the isle of St. Helena.

While Fulton was absorbed in the science of dynamics he turned always to Art for his recreation.

Before Fulton left France it had been decided that Barlow would bring out a new edition of his "Vision of Columbus" and that it should be illustrated with drawings suggested and superintended by Fulton. Barlow did not remain long in Paris and soon after his return to this country, the poem, enlarged and re-christened "The Columbiad," was brought out in sumptuous style in Philadelphia—a quarto with plates designed by the English artist, Smuke, and executed by the best English engravers. The subjects for the designs were all pointed out by Fulton, who had the costly engravings made at his own expense. A painting of Barlow by Fulton added to the value of the work.



BIRTHPLACE OF ROBERT FULTON

Fulton Farm in Little Britain township in the dense forests of Pennsylvania, where, in 1756, the lad was born who was destined to revolutionize the world's trade—From an old print designed by Reigart, one of Fulton's biographers



FULTON'S GIFT TO HIS MOTHER

Homestead in Washington County, Pennsylvania, which Fulton purchased for his widowed mother and sisters on his twenty-first birthday with money he had accumulated in Philadelphia by painting portraits and landscapes, and making drawings of machinery



TO DESTROY THE NAVIES OF THE WORLD

When the European Continent was under the spell of the Great Napoleon, the young Fulton devised a torpedo which would annihilate the fleet of the enemy—In 1805 he demonstrated its possibilities by blowing up a strongly-built Danish brig—From an old print



EARLY DAYS ON THE HUDSON RIVER

Society gathered near Peekskill to witness the shell-boat regattas which have since been adopted by American Universities and have become annual events in this country—This old print by Whitefield shows the first steamboats on the gala course

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This painting is now in possession of the Barlow family in New York city and a replica is owned by Fulton's grandson at Claverack, New York. From Fulton's will it is seen that the engravings and the press-work cost \$5,000, mention of which he necessarily makes in resigning all his property rights in the production to the widow of his friend who survived her husband some six years. The will also disposes of his valuable collection of paintings, including West's "Ophelia" and "King Lear," which are now in the Boston Athenæum.

The arrival of Chancellor Livingston in Paris, 1802, as Minister of the United States, turned Fulton's interests toward steamboat building, to which he had before given but little if any thought. Chancellor Livingston had sailed from New York to Greenwich upon Samuel Morey's steamboat on Long Island Sound and was on the boat that John Fitch sailed about the Collect Pond, where the Tombs Prison and adjacent buildings now stand, using both paddle-wheels and screw-propeller, and besides this had spent no little money and given no small share of his time to experimenting with a horizontal wheel under the bottom of a boat, an Englishman named Nesbit co-operating, so that he was full of enthusiasm on the subject. The plans were all worked out together and in 1802 Fulton left Paris for the village of Plombières, through which there runs a little stream, and continued his experiments which resulted in the building during the next winter of a steamboat. Just as it was proposed to test the strange thing, one of the watchmen who had been left to guard it, came rushing in with the news that she had broken in two in the middle and sunk to the bottom of the stream. Nothing daunted Fulton began at once upon a new hull and within a few weeks he addressed a letter to the French National Institute, inviting them to witness a trial of his boat and this time the trial proved to be a success. It is hard to see why Fulton,

after his trial of a boat at Plombières built on the lines of other boats, should have adopted the crude wedge-shape hull that he ordered for the "Clermont." It is also hard to understand why John Fitch, after having used the paddle-wheels suspended over the sides of a boat, should have given away to the arguments of others and incorporated a series of swinging paddles along the sides as a method of propulsion.

It is because of this anticipatory steamboat that the French people are having now at Bordeaux a Fulton centennial to which the maritime interests of the world have contributed, our own government sending models of early boats.

Barlow wrote to Fulton while he was at Plombières:

... "I had a great talk with Livingston. He says he is perfectly satisfied with your experiments and calculations, but is always suspicious that the engine beating up and down will break the boat to pieces. He seems to be for trying the horizontal cylinder, or for returning to his mercurial engine. I see his mind is not settled, and he promises now to write you, which he says he should have done long ago, but he thought you were to be back every fortnight. He thinks the scale you talk of going on is much too large, and especially that part which respects the money. You converted him as to the preference of the wheels above all other modes, but he says they cannot be patented in America because a man (I forget his name) has proposed the same thing there. You will soon get his letter. Parker is highly gratified with your experiments; he wishes, however, something further to remove his doubts—about keeping the proportions and as to the loss of power in different velocities. He wishes to have another *barrelier* made, four times as strong as this or thereabouts, to see whether the proportional velocity would be the same when moving by the paddles as when moving by the fixture on shore. I should like to see this too. If you desire it, I can take this *barrelier* to Cala and see whether he can make another of the same volume four times as strong, and know what it will cost. The relative velocities can be tried in Perrier's pond on the hill."

In another letter to Fulton Barlow wrote that he had just visited the National Depot of Machines and had

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seen there the model of a new steam-boat. Continuing, he says:

"In all its parts and principals a very elegant model. It contains your wheel-oars precisely as you have placed them except that it has four wheels on each side to guide round the endless chain instead of two. The two upper wheels seem to be only to support the chain; perhaps it is an improvement. The model of the steam-engine is in its place, with a wooden boiler, cylinder placed horizontal, everything complete. I never saw a neater model. It belongs to a company at Lyons, who got out a patent three months ago. *I shall say nothing to Livingston about this model.*"

It became apparent to Fulton that the center of civilization was changing, that America was to be the pivot rather than the Old World nations. Invention was receiving the patronage in America while France and England were indifferent to mechanical pursuits. America was in itself an innovation. Americans were originators and disdained imitation of the older civilization. It was a new land with new ideas and new impulses. Fulton realized that the great future of invention was in the hands of the western civilization; that it was a world of opportunity.

Having demonstrated to his own satisfaction, and to the satisfaction of both Chancellor Livingston and Joel Barlow, that a steamboat could be so built as to be usable, Fulton was anxious to get back to his own land and claim the benefits given to Chancellor Livingston by the legislature of New York; he accordingly left France for England where he was to order the engine for a boat that should be built at once for the Hudson. Barlow wrote him while yet at Plombieres:

"Your reasoning is perfectly right about inventions and the spirit of the patent laws, and I have no doubt it may be secured in America. . . . My project would be that you should pass directly over to England, *silent and steady*, make Chapman construct an engine of twelve inches, while you are building a boat of a proportionate size. Make the experiments on that scale, *all quiet and quick*. If it answers, put the machinery on board a vessel and go directly to New York (ordering another engine as large as you please to follow you), then secure your patent and begin your opera-

tion, first small and then large. I think I will find you the funds without any noise for the first operation in England, and if it promises well you will get as many funds and friends in America as you want. I should suggest a small operation first, for several reasons: it can be made without noise. There must be imperfections in the first trial which you can remedy without disgrace if done without noise; you can easier find funds for a small experiment, etc. . . . I have talked with P. on your observations about great boats with merchandise."

In September, Fulton, then in London, wrote to Barlow who had sailed for America, November 2, 1804, and arrived in New York after a passage of fifty-two days (Livingston following soon after), that he was about ready to start for America, stating that he had an income of £500 sterling a year, with a steam engine and pictures worth £2000; and in October, 1806, he found shipping by the way of Halifax. While the ship on which he was a passenger lay at the dock there Fulton painted the portraits of some natives who crowded about for barter. These pictures are also now in the possession of his grandson at Claverack, New York, whose home is a veritable Fulton museum.

Fulton went at once to Kalorama, the home of Joel Barlow, near Washington, and began experimenting with a small engine which he had brought with him from England on the waters of Rock Creek, at a point designated now by a government memorial, with different shapes and sizes of wooden blocks to determine just what shape and what proportions would offer the least resistance when drawn through the water. The data of Bouyfoy was used in these experiments and was included later by Fulton in his application for a patent.

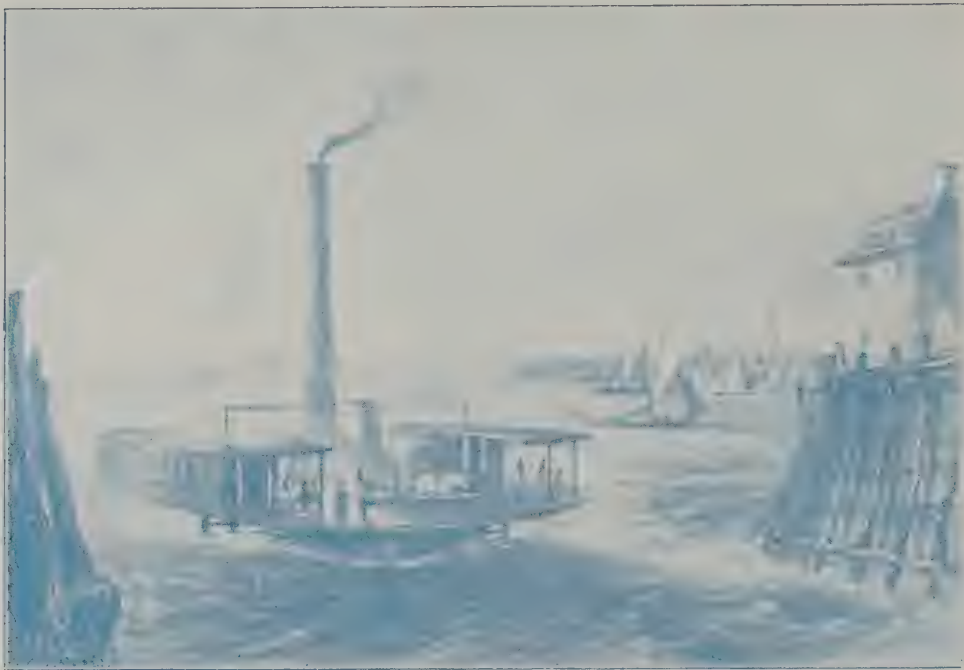
It was from Kalorama that Fulton wrote to Dr. William Thornton the letter which is here produced for the first time in fac-simile questioning the possibility of ever building a steamboat that could travel six miles an hour, although in one of his letters to



FIRST STEAMBOAT IN THE WORLD TO ESTABLISH PERMANENT TRAFFIC—Model of the "Clermont" in the National Museum at Washington showing a craft totally dissimilar to the accepted illustrations of this historic vessel—This model repudiates the prints in nearly all the histories of steam navigation but is absolutely correct according to the descriptions left by Fulton and his colleagues—This reproduction is from a plate loaned by the courtesy of Samuel Ward Stanton, an authority on marine architecture



COMPASS USED BY PILOT ACKER ON THE "CLERMONT" IN 1807—It came into the possession of Christian Cooper through Mrs. Acker and was presented by the latter, April 22nd, 1891, to Robert Fulton Ludlow, grandson of inventor of the "Clermont"—The compass bears the name of its maker, John H. Wheeler



FIRST STEAM FERRIES IN WATERS OF NEW YORK

The "Brooklyn" built after plans by Robert Fulton and running across the East River



HARBOR OF AMERICA'S METROPOLIS ABOUT 1807

Old print—A remarkable contrast with the scenes about New York to-day



ALONG THE AMERICAN RHINE - THE HISTORIC HUDSON
 Old Engraving of beautiful waterway through which the "Clermont" sailed in 1807

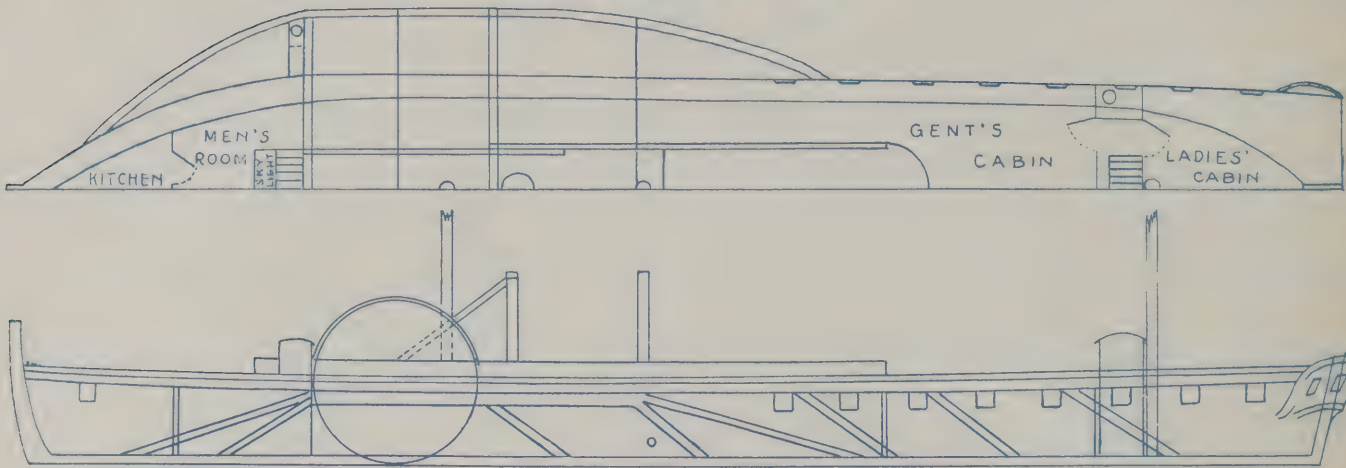
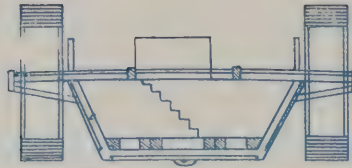


OLD NEW YORK AS ROBERT FULTON KNEW IT
 Rare Engraving of Broadway at City Hall Park about one hundred years ago

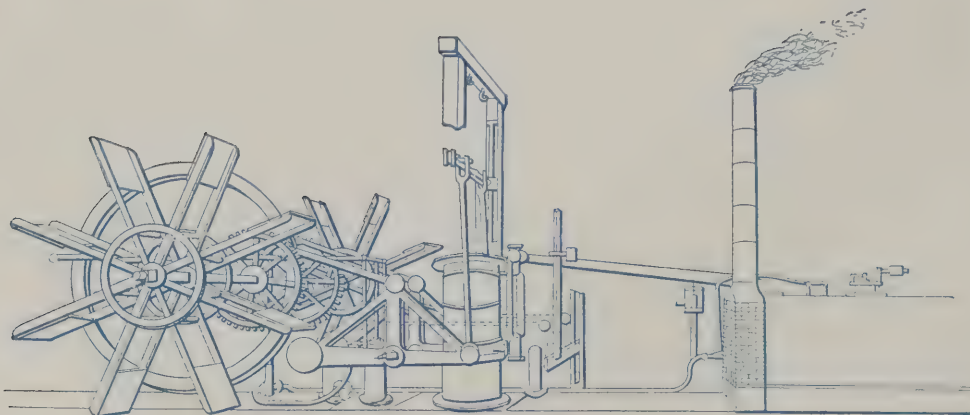
STEAM BOAT RARITAN

Designed by Robert Fulton

1808



Model in the National Museum at Washington



Model of the engine of the "Clermont" of 1807
Now in National Museum at Washington
Plates loaned by the Nautical Gazette

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Barlow while they were in France, he had predicted a speed of sixteen miles an hour, to which Barlow had answered: "I see without consulting Parker you are mad."

All along historians have said that Chancellor Livingston was the pocket-book of the enterprise. What if it should turn out that the money that went into the "Clermont" came from Barlow instead?

I merely give this as a hint. History has done more strange things and not the strangest is its inclination to give credit where credit does not belong and to obstinately refuse to give credit where credit does belong. I might mention a hundred instances, and it is a pleasure to find that many of the wrongs are being righted in the pages of this journal.

The engine for the proposed boat lay six months in the Custom House till the necessary money could be gotten together to pay what charges had been made against it, and during this time Fulton endeavored to lessen his share of the burden by offering one-third of the rights in the boat for a proportionate contribution to the expense. It was generally known that this offer was made but no one was willing to put any money into such a fool undertaking.

The difficulties with which Fulton contended do not speak well for the far-sightedness of capital. As a promoter he had many of the dire experiences of his predecessor, John Fitch. Fulton, however, was a promoter, while Fitch was but an inventor with a characteristic incapacity for organization. A few years ago I heard an anecdote regarding Fulton which later appeared in the *New York Times*. It was told by an old gentleman who was born in the first decade of the first century of steam navigation which is about to be celebrated. He said:

"My father and Fulton were intimate. Fulton was in the habit of coming to see my father, and, having steamboat on the brain, he probably talked my father, John McKesson, to death. It was always end-

less chains or something or other. My father was a patient listener, and that's a talent. One day during office hours Fulton came to see my father.

"'John,' said he, 'I have got it sure. I can make her go.'

"'I am too busy to listen to you now, Fulton. I tell you what you do, come round to my house to-night.'

"'I can't,' said Fulton. 'What I want to see you about is this: I must have \$1,000.'

"'Well, I have n't got it to give you. But anyhow, come to the house all the same. You can take tea with us. Then you can talk with me up to ten o'clock at night; then if you are not through I shall go to sleep. I always go to bed at ten.'

"Fulton seemed to hesitate for a while, and at last said he would come. Fulton did come round, and took tea with father. Fulton told him about the paddle-wheel. Father thought that a paddle-wheel would never do. You see, in those times they were cocksure that the power used to lift up the water by the wheel would about neutralize the propelling force. Ha! ha! those old fellows were smart. We always are in our generation.

"'Well,' father said, 'Robert Fulton, your wheel is no good. It would never work. You talk about making the boat go four miles an hour! That's an unheard of speed. No, sir. With a wheel on your boat she'd stand stock still.'

"Then Robert Fulton argued it out with father, and ten o'clock came, and father was getting sleepy. Just then maybe Fulton got more excited, or father more attentive, and it was eleven o'clock and they were talking over it still.

"'It is time for you to go home, Robert,' said my father, 'unless you would like to have a bed here, and you might as well do that.'

"'If I do,' answered Fulton, 'I only adjourn the talk until to-morrow, for you must get me the \$1,000.' Maybe Fulton buttonholed father before breakfast. Anyhow, Fulton's persuasive powers overcame father's doubts, and he agreed that he would do his best to raise the \$1,000 for Fulton. Right after breakfast father went out, and the first man he met was Robert Lenox. 'See here, Mr. Lenox,' said father, 'I want some money from you to help one of Fulton's schemes. You may not believe it ever will be done, but the man fancies that he can make a boat go four miles an hour. I think he intends using steam, and a wheel, or something. I am going to let him have \$100. Would you mind putting down your name for the same sum?'

"'It seems quite preposterous,' said Mr. Lenox to my father, 'and I have no reason to believe that Mr. Fulton's boat will ever accomplish what he thinks it will. Still, if

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your name is down, you may let him have \$100 from me."

"Then," said my father, "I will write down 'Robert Lenox, \$100.'"

"No, no," answered Mr. Lenox, "just put down the \$100 with no name to it, because I shouldn't like the people who come after me to learn that I was such a dunce as to think that Fulton or anybody else ever could make a boat go with steam or wheels four miles an hour."

"That's the story my father told me. You never can exactly tell what does come from an invention. I wonder what Fulton would have to say could he learn how those rocks at Hell Gate had to be blown up because they bothered that fleet of steamers which had to pass there every day."

The hull of the "Clermont," which was ordered soon afterward, differing from everything that was ever called a boat, was built by Charles Brownne whose ship-yard was at Corlears Hook on the East River. Two hundred years had gone by since the first boat of any size built in the New World was launched at Popham Beach, Maine, at the mouth of the Kennebec, of which event the people of that state are so proud, and justly, that they are now making preparations to celebrate its three hundredth anniversary. This first boat was named the "Virginia" and the materials for its construction were shipped over from England with the colonists on "The Gift of God" and "The Mary and John," sailing from Plymouth, England, June 1, 1607, and arriving August 19 of the same year. Work was begun on the boat the next day after the arrival of the settlers. The builder was a Mr. Digby, a master shipbuilder of London. The launching took place the following spring. The boat was a pinnacle of thirty tons, navigated with oars and two small sails. Light of draft and easy to handle it was of great service to the colonists in exploring the neighboring waterways and trading with the Indians. Besides its many expeditions of this kind it made two trips across the ocean, going to England with the colonists when they abandoned the settlement in the autumn of 1608, and returning with Sir George

Somers' expedition in 1609. This little craft which seems insignificant to us in this day of floating palaces and colossal freighters, compared favorably in size with the vessels built in that day.

The launching of the "Clermont," just one hundred years ago this summer, was the third important event in the annals of the American Republic. The Declaration of Independence proclaimed the birth of a new people; the Constitution established a new political power; the inauguration of steam navigation threw wide open the gates of the world and linked the races and climates and products of the earth into a great and practical whole. And yet it hardly created honorable attention. It aroused nothing more than curiosity. Men of acknowledged business-standing looked upon it as the awe-inspiring feat of some foolhardy adventurer who prized notoriety as dearer to him than the safety of life. The only ones who seemed to have noticed the boat at all were the up-river packet-men who, as if under some premonition as to what her building really meant to them, tried repeatedly to destroy her. Twice during the June following her launching Fulton wrote of this in his diary:

June 7: To the Men For Guarding the
boat two nights and a day after the
vessel ran against her.....\$4
June 13: Pay to the men who guard the
boat.....\$20.00

I have looked through the files of the newspapers of one hundred years ago, preserved by the New York Historical Society, and in the Lenox Library, to ascertain just what impression the beginning of the world's commerce made upon the press and the public. Although the population of New York numbered upwards of eighty-three thousand and there were more than twenty papers published, half of them having daily editions, besides several weekly and monthly magazines, there is no mention of it and when the boat really began to run upon her route regularly the only account



FIRST STEAMBOAT PAINTINGS IN THE WORLD

Reproductions from rare canvases by James Bard, the marine painter whose brush perpetuated the architecture of the first boat to be propelled by steam — Bard's painting of the "North American," a marvel of the Hudson River



"WHY SLEEP ON THE EDGE OF A VOLCANO"

This was the advertisement introducing the "Commerce," which towed barges containing sleeping apartments for its passengers—This boat was designed for rich travelers on the Hudson who desired to avoid the danger of sleeping over steam boilers—Reproduction from canvas by James Bard and believed to be the oldest steamboat painting in the world



FIRST BOAT BUILT FOR HUDSON RIVER DAY LINE SERVICE

The "City of Albany" reproduced from the original Bard canvas painted for Commodore Van Sanvoord, a leading personality in the first years of steam navigation following its inauguration by Fulton



FIRST FOUR-PIPE STEAMBOAT IN THE WORLD

The "Champlain" of 1828 from rare canvas owned by Captain Roe of Albany, New York, who for more than sixty years was a prominent figure on the Hudson river and whose family is one of the oldest in river navigation

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given of her, or of her performances, is to be found in the paid advertisements of the company or in personal letters written either by Fulton himself or by friends on board.

The initial trip was made from Paulus Hook Ferry, now Barclay street (by some confounded with Paulus Hook itself, now known as Jersey City), on Monday, August 17, from a ferry-house that was but recently removed in numbered sections and set up on Starin's Glen Island in Long Island Sound. The first trip is described by Fulton in a letter to Joel Barlow and in another to the *Citizen*. In the former he said:

"My steamboat voyage to Albany and back has turned out rather more favorable than I had calculated. The distance from New York to Albany is one hundred and fifty miles: I ran it up in thirty-two hours, and down in thirty. I had a light breeze against me the whole way, both going and coming, and the voyage has been performed wholly by the power of the steam-engine. I overtook many sloops and schooners beating to windward, and parted with them as if they had been at anchor.

"The power of propelling boats by steam is now fully proved. The morning I left New York, there were not perhaps thirty persons in the city who believed that the boat would ever move one mile an hour, or be of the least utility; and while we were putting off from the wharf, which was crowded with spectators, I heard a number of sarcastic remarks. This is the way in which ignorant men compliment what they call philosophers and projectors.

"Having employed much time, money, and zeal, in accomplishing this work, it gives me, as it will you, great pleasure to see it fully answer my expectations. It will give a cheap and quick conveyance to the merchandise on the Mississippi, Missouri, and other great rivers, which are now laying open their treasures to the enterprise of our countrymen; and although the prospect of personal emolument has been some inducement to me, yet I feel infinitely more pleasure in reflecting on the immense advantage my country will derive from the invention," etc.

The letter in the *Citizen* is very little different from what he had written to Barlow:

"TO THE EDITOR OF THE 'AMERICAN CITIZEN,'

"SIR:—I arrived this afternoon, at four o'clock, in the steamboat from Albany. As the success of my experiment gives me

great hopes that such boats may be rendered of great importance to my country, to prevent erroneous opinions and give some satisfaction to the friends of useful improvements, you will have the goodness to publish the following statement of facts:

"I left New York on Monday at one o'clock, and arrived at Clermont, the seat of Chancellor Livingston, at one o'clock on Tuesday—time, twenty-four hours, distance, one hundred and ten miles. On Wednesday, I departed from the Chancellor's at nine in the morning, and arrived at Albany at five in the afternoon—distance, forty miles, time, eight hours. The sum is one hundred and fifty miles in thirty-two hours, equal to near five miles an hour.

"On Thursday, at nine o'clock in the morning, I left Albany, and arrived at the Chancellor's at six in the evening: I started from thence at seven, and arrived at New York at four in the afternoon—time, thirty hours, space run through, one hundred and fifty miles, equal to five miles an hour. Throughout my whole way, both going and returning, the wind was ahead; no advantage could be derived from my sails: the whole has, therefore, been performed by the power of the steam-engine.

"I am, sir, your obedient servant,
ROBERT FULTON."

In the correspondence of a gentleman from South Carolina there is a letter published in the *British Naval Chronicle* dated September 8, 1807, descriptive of the trip and stating that "on the nineteenth of August" he "was invited to go from Clermont to Albany on the boat which had come up in twenty-four hours from New York." Prior to this trip of the steamboat the distance covered required from four days to a full week on the sloops and packets that sailed between the two cities.

This date would agree with Fulton's account and may be accepted as correct, although there are as many dates given for the first trip as there are differing pictures of the true and accurate lines of the boat itself. I have made a life-long study of the development of steam navigation, investigating the mechanical evolution as thoroughly as the historical, and I regret the necessity of here stating that all the pictures of Fulton steamboats presented in two of his most widely accepted biographies are absolutely untrustworthy. They represent either

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the imagination or the misunderstanding of the artist rather than anything that Fulton ever planned. I doubt if he would be able to recognize them as his own "children." It is unfortunate that these spurious pictures are used in nearly all the books that occupy positions of authority in our public libraries.

Possibly the dropping of the figure "one" before the "seven" in transcribing the account has led to the naming of "August 7" as the date of the first trip, and the careless omission of the hook from the top of the figure "seven" in transcribing some other account has led to setting the time on the "eleventh." Let us then, for the sake of posterity, settle down upon the fact that the boat left New York Monday afternoon, August 17, 1807, at one o'clock, having on board a party of invited guests, among whom was the Dean of Ripon, England, and arrived at Clermont, the home of Chancellor Livingston, Tuesday afternoon, where she remained until Wednesday morning at nine o'clock, when she left for Albany, arriving there at five o'clock, having made the longest continuous trip of any steamboat in the world. Later Fulton wrote to Chancellor Livingston:

"NEW YORK,

"SATURDAY, THE 29TH OF AUGUST, 1807.

"DEAR SIR:—On Saturday I wrote you that I arrived here on Friday at four o'clock, which made my voyage from Albany exactly thirty hours. We had a little wind on Friday morning, but no waves which produced any effect. I have been making every exertion to get off on Monday morning, but there has been much work to do—boarding all the sides, decking over the boiler and works, finishing each cabin with twelve berths to make them comfortable, and strengthening many parts of the iron work. So much to do, and the rain, which delays the caulkers, will, I fear, not let me off till Wednesday morn-

ing. Then, however, the boat will be as complete as she can be made—all strong and in good order and the men well organized, and I hope, nothing to do but to run her for six weeks or two months. The first week, that is if she starts on Wednesday, she will make one trip to Albany and back. Every succeeding week she will run three trips—that is, two to Albany and one to New York, or two to New York and one to Albany always having Sunday and four nights for rest to the crew. By carrying for the usual price there can be no doubt but the steamboat will have the preference because of the certainty and agreeable movements. I have seen the captain of the fine sloop from Hudson. He says the average of his passages have been forty-eight hours. For the steamboat it would have been thirty certain. The persons who came down with me were so much pleased that they said were she established to run periodically they never would go in any thing else. I will have her registered and every thing done which I can recollect. Every thing looks well and I have no doubt will be very productive.

"Yours truly,

"ROBERT FULTON."

It is due time that an accurate historical record be made of the "Clermont," the first steamboat in the world to enter into the trade of carrying passengers as a practical and permanent business. It is of further importance that publishers of books of educational and historical purport present accurate reproductions of the "Clermont" and this applies also to all other prints relating to the vital events of our national life.

As shown first in the *Connecticut Magazine*, the "Clermont" was a wedge-shaped boat, with two masts and no bow-sprit or figure head. According to Fulton's own statement, and certainly he knew the dimensions of his first steamboat, she was one hundred and fifty feet long, thirteen feet wide and seven feet deep. Being flat-bottomed she carried two "lee-boards" to use as adjuncts for

PLAN of the CITY of NEW YORK

as it appeared in 1743. The City of New York, from the Hudson River to the East River, and from the North River to the South River, is divided into five wards, and is bounded by the Hudson River to the west, the East River to the east, the North River to the north, and the South River to the south.



The city then had about 8,000 inhabitants and was the most important port in the colony. The city was divided into five wards, and the Hudson River was the main source of water for the city. The city was founded in 1624 and was the first city in the colony to have a city government. The city was the center of the colony's economy and was the most important port in the colony. The city was the most important port in the colony and was the center of the colony's economy.

PLAN of the CITY of NEW YORK,
with the recent and intended Improvements Drawn from
actual survey by William Bridges, City Surveyor, A.D. 1807.

REFERENCES

- 1 Government House, at the Battery
- 2 Trinity Church, Broad Way
- 3 Grace Church, do
- 4 St. Paul's, do
- 5 St. George's Chapel, Beekman Street
- 6 St. Mark's Church, Nassau St.
- 7 Christ Church, Nassau St.
- 8 St. John's, do
- 9 Old Dutch, do
- 10 New Dutch, do
- 11 North, do
- 12 Calvary Reformed, N. York St.
- 13 German Lutheran, N. York St.
- 14 English, do
- 15 English Church, Gold St.
- 16 St. Andrew's, do
- 17 St. Andrew's, do
- 18 Moravian, do
- 19 Scotch Presb't, do
- 20 do, do
- 21 do, do
- 22 Presbyterian, do
- 23 do, do
- 24 do, do
- 25 do, do
- 26 do, do
- 27 do, do
- 28 French Church, N. York St.
- 29 St. Peter's, do
- 30 Independent, do
- 31 Brande Old Meet house, Liberty St.
- 32 do, New, do
- 33 Jews Synagogue, Mill St.
- 34 City Hall, do
- 35 Court, do
- 36 Strickwell, do
- 37 Above house, do
- 38 New Prison, do
- 39 College, do
- 40 Hospital, do
- 41 Library, do
- 42 do, do
- 43 Theatre, do
- 44 Exchange, do
- 45 Pig, do
- 46 Owing, do
- 47 Bear, do
- 48 Catherine Slip, do
- 49 New Court house, do
- 50 City Hall, do
- 51 St. Stephen's Church, do

Fifth Ward

Third Ward

First Ward

Fourth Ward

Second Ward

Ninth Ward

Seventh Ward

EAST

Published by
ISAAC RILEY
New York 1807

Engraved by Peter Maverick

Map of New York a century ago when first successful steamboat in the world, the "Clermont," sailed up the Hudson River—The city then had about 83,000 inhabitants and was concentrated below Spruce street—It was then planned to preserve a system of boulevards along the water-front and construct harbors rather than piers for shipping purposes—Modern commerce made this æstheticism impractical and the rise of steam navigation sacrificed municipal art to the greater demand of public utility and progress

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steering when the sails were set, to prevent making leeway; the bottom was a transverse platform and moulded out with batten and nails. The shape of the bottom being thus formed, the floors of oak and spruce were placed across the bottom; the spruce floors being four by eight inches and two feet apart; the oak floors being reserved for the ends; the oak floors both sided and moulded eight inches. Her top timbers (which were of spruce, and extended from a log that formed the bridge to the deck) were sided six inches and moulded at heel, and both sided and moulded four inches at the head. Her draught of water was twenty-eight inches. She had a copper boiler weighing 4,399 pounds, entirely encased with brick, the whole being twenty feet long, seven feet deep, and eight feet wide, above which there towered a twenty-five foot chimney made of sheet iron bought of Mr. Jackson for \$26.25; her cylinder was twenty-four inches in diameter, with four feet stroke; her wheels, made of planks bought of John Cunningham for \$23.43, were fifteen feet in diameter, with eight arms; the buckets or paddles having a thirty-inch face and two feet dip; her shaft was of cast iron, four and a half inches in diameter, under the deck, and had a fly-wheel of ten feet diameter outside of the boat; the arms of the wheel extended below the bottom, and were the source of great inconvenience in shoal water.

In the *Albany Gazette* of September 2, 1807, there is an "ad" reading as follows:

"The North-River Steamboat will leave Pauler's Hook Ferry on Friday, the 4th of September, at 9 in the morning, and arrive at Albany on Saturday at 9 in the afternoon. Provisions, good berths, and accommodations are provided.

"The charge to each passenger is as follows:

To Newburg	dols. 3,	time, 14 hours.
To Poughkeepsie	" 4,	" 17 "
To Esopus	" 5,	" 20 "
To Hudson	" 5½,	" 30 "
To Albany	" 7,	" 36 "

"For places apply to William Vandervoort, No. 48 Courtlandt Street, on the corner of Greenwich Street."

The *Connecticut Herald*, of October 9, 1807, has a letter from New York, dated October 3, in which the writer says:

"Mr. Fulton's steamboat is handsomely fitted for the conveyance of passengers between this city and Albany. She left here yesterday with ninety passengers."

On October 13, 1807, a second letter is printed in which the writer states:

"Mr. Fulton's new invented steam Boat, which is fitted up in a neat style for passengers and is intended to run from New York to Albany as a packet, left here yesterday with 90 passengers, against a strong wind and tide. Notwithstanding which it was judged she moved through the water at the rate of six miles an hour. Yesterday she came in from Albany in 28 hours with 60 passengers. Quere; Would it not be well if she contract with the Post-master General to carry the mail from this city to Albany?"

A letter from John Lambert, an Englishman traveling in this country in 1807-8, has an excellent reference to the "Clermont," although the writer was slightly mixed as to the time of her building; the letter reads as follows:

"We were very desirous of seeing the construction of the steamboat, which travels at the rate of *five miles an hour against wind and tide*. It was built about four years ago, under the direction of Mr. Fulton, an American gentleman of great mechanical abilities. . . . The machine which moves her wheels is called a twenty-horse machine, or equal to the power of so many horses, and is kept in motion by steam from a copper boiler eight or ten feet in length. The wheels at either side are similar to those of water-mills, and are under cover, they are moved backward or forward, separately or together, at pleasure. (?) Her principal advantage is in calms or against head-winds. When the wind is fair, light square sails, etc., are employed to increase her speed. Her accommodations include fifty-two berths besides sofas, and are said to be equal, if not superior, to any vessel that sails on the river. They are necessarily extensive, as all the space unoccupied by the machinery is fitted up in a convenient and elegant manner. Her route between Albany and New York is a distance of 160 miles, which she performs regularly twice a week, sometimes in the

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short period of thirty-two hours, exclusive of the detention by taking in and landing passengers. She carries from 100 to 120 people. The fare from New York to Albany is seven dollars."

This harmonizes perfectly with the description of the boat as published in the *Hudson Bee* in 1808, after the boat had undergone extensive alterations in shape and proportions. Speaking of the wheels, which at first were not covered but were later enclosed in wheel-boxes, the *Bee* says:

"They are moved backward or forward separately or together at pleasure. The machine which moves the wheels is called, we believe, a twenty horse-power machine, and is kept in motion by steam from a copper boiler 8 or 12 feet long. She sails at the rate of 4 miles an hour."

We have Fulton's personal statement as to the size of the boat (given above) and also his notations on the back of a patent specification intended for John Stevens, of Hoboken, that the bow and the stern were sharpened to angles of sixty degrees. With this agrees the statement of Professor Renwick in his letter to Captain Edward Sabine, R. A., Secretary of the Royal Society in England, which was written about 1829-30:

"Mr. Fulton, in his earlier boats, had employed flat bottoms and prows nearly of the shape of a wedge, with plane surfaces. I recollect, even at that early date, having combated the propriety of this plan in a conversation I had with him. The changes that he and his imitators subsequently made were, however, rather grounded upon the necessity of increasing the strength of the vessels by regular curves in their molds, than from a conviction of the error in the principle. The last boats built under his own directions resembled in form vessels intended to be propelled by sails, but of a small draught of water."

During the winter of 1807-8 the "Clermont" was so thoroughly changed that one would have been safe in declaring that, except in engine and purpose, she was not the same boat at all. Professor Renwick says (though he is mistaken about the name being "Clermont"):

... "The winter of 1807-8 was occupied in remodeling and rebuilding the vessel, to which the name of 'Clermont' was now

given. The guards and housings for the wheels, which had been but temporary structures, applied as their value was pointed out by experience, became solid and essential parts of the boat. For a rudder of the ordinary form, one of surface much more extended in its horizontal dimensions, was substituted. This, instead of being moved by a tiller, was acted upon by ropes applied to its extremity, and these ropes were adapted to a steering wheel, which was raised aloft towards the bow of the vessel. . . . The 'Clermont,' thus converted into a floating palace, gay with ornamental painting, gilding and polished woods, commenced her course of passages for the second year in the month of April."

So extensive were the changes made that a new registration at the custom-house was necessary. This registration, which was transcribed by Mr. John Morrison for his "History of American Steam Navigation," is as follows:

"No. 108.

"Enrollment in conformity to an Act of the Congress of the United States of America entitled 'An Act for enrolling and licensing ships or vessels to be employed in the coasting trade and fisheries, and for regulating the same.'

"Robert R. Livingston, of Clermont, 'Columbia County, State of New York, 'having taken and subscribed to the oath required by the said Act and having sworn that he together with Robert Fulton of the City of New York, are citizens of the United States, and sole owners of the ship or vessel called the North River Steamboat of Clermont, whereof Samuel Wiswall is at present master, and as he hath sworn he is a citizen of the United States, and that the said ship or vessel was built in the City of New York, in the year 1807, as per enrollment 173 issued at this port on the 3d day of September, 1807, now given up, the vessel being enlarged. And Peter A. Schenck, Surveyor of the Port, having certified that the said ship or vessel has one deck and two masts, and that her length is 149 ft.; breadth, 17 ft. 11 in.; depth, 7 ft., and that she measures 182-48-95 tons. That she is a square-sterned boat, has square tuck; no quarter galleries and no figure-head. Hands and Seals, May 14, 1808."

On May 13, 1810, the *Hudson Bee*, which, more than any of the other papers of the time, seems to have followed the movements of the steamboat, says:

"The North River Steamboat (which is believed to have been the first one built on



IN MEMORY OF AMERICA'S GREATEST LEGEND

The "Rip Van Winkle," an early steamboat that carried the beloved name of the sage of the Catskills and sailed the historic river made famous in American literature by Washington Irving



ONE OF THE FIRST STEAMBOATS TO UNDERTAKE A LONG RUN

The "Fanny," a staunch little craft under command of Captain David Tremper of Roundout, New York, one of the most popular men that ever captained a ship—In 1840, after long service, the "Fanny" was offered for sale as "built of locust and live oak and Jersey plank, thoroughly coppered"



SPEEDIEST RIVER BOATS OF THE EARLY DAYS

The "Oseola," a swift little craft that ran to Poughkeepsie in 1843—Reproduction from original painting by Bard for Captain Allen Degroot, an old-time captain of the Hudson River



ONE OF THE MOST POPULAR STEAMBOATS OF HER TIME

The "Alida," which for many years carried distinguished travelers along the "American Rhine"—Reproduction from old canvas painted by Bard for Commodore Van Sanvoord of New York

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the river and has lately been known by the name of 'Clermont,' that is in the books) Captain Wiswall, arrived at this port yesterday afternoon at 5 o'clock, (Sunday, May 13, 1810) being the shortest trip she has ever made. But for the necessary detention in the way of landing passengers, it would have been performed in 19 hours."

During the fall of that year some of the citizens of Albany appealed to the press to enter their protest against the cutting of wood on the city commons for use on the steamboat without paying anything for the privilege. It is figured out in the papers that the boat carried on an average, eighty passengers each way per trip. "At seven dollars each," says the writer, "the income of the company was upwards of \$80,000 and if we deduct one-quarter for expenses, there yet remains \$60,000 profits. Isn't that enough to allow something for the wood used as fuel?"

The success of the great invention was speedily followed, January 7th, 1808, by Robert Fulton's marriage to Miss Harriet Livingston, the daughter of Walter Livingston, Esquire, of Tiviotdale, Livingston Manor. It is related that the engagement was formally announced by Chancellor Livingston, upon the deck of the "Clermont," during the interesting hours of her first successful voyage. In a graceful speech telling of the betrothal, the Chancellor prophesied that "the name of the inventor will descend to posterity as that of a benefactor to the world, and that it is not impossible that before the close of the present century, vessels might even be able to make the voyage to Europe without other motive power than steam."

When the business world saw the Fulton theory of steam navigation develop into a great and strong business enterprise, there was an immediate rush of capital into its promotion. The business world is imitative. It lacks courage for the initiative. It waits for someone else to take the risk and then jostles and grasps for a handful of the emoluments.

In 1811 an opposition line, with the "Hope" and the "Perseverance," under Captains Sherman and Bunker, was announced as ready for patronage. These boats were swifter and better in every way than the "Clermont," even after the extensive alterations that entitled her to the appellation: "floating palace, gay with ornamental painting, gilding and polished woods." Captain Bunker had just given up his sailing packet, which, on April 14, 1808, had been advertised as sailing between New York and Hudson. "This," says the *New York Press*, in a retrospective edition some years after, "was the first packet run on the river and as an inducement to travelers, it was announced that bed and bedding would be provided for passengers going that way. Prior to this travelers had to furnish themselves with such comforts."

The "Hope" was launched Tuesday evening, March 19, 1811, and on the trip down the river, July 27, was challenged by the "Clermont" for a race. This was the first steamboat race in history. Both boats left Albany at nine o'clock in the morning, with the "Hope" a little in the lead. This position was held until "the boats were about two miles above Hudson when the old boat, by reason of her lighter draught, took advantage of the shallow and tried to pass while the "Hope" kept to the channel. The result was a collision in which neither boat was at all injured. Captain Bartholomew on the "North River" (or "Clermont"), at once challenged the doughty Bunker to race for \$2,000 for any number of miles but the latter refused in a proper spirit. Either boat ran to New York in twenty-nine or thirty hours."

Competition was keen and the matter soon found its way into the courts where, after a long, legal wrangle, the two boats of the monopoly breakers were confiscated to the original company and destroyed at Albany in the presence of their builders.

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At this time Fulton had only the one boat running on the Hudson, but he soon added the "Car of Neptune" and the "Paragon," both of which were in every way better than his earlier efforts—the "Raritan" was at this time on the Raritan river. These two boats had high poop decks, four feet above the main deck, and the entrance to the cabin was by the old-fashioned companionway, not by a house on deck. They each carried two masts. On the foremast was a square sail, two topsails and a jib, and on the main mast each carried a spanker and a topsail. The foremast was hinged by a heel and trunnions so that it could be lowered when the wind was ahead. When the weather was favorable everybody, passengers and crew alike, were summoned to raise the mast and hoist sail. When making a landing the pilot blew a great tin horn, some five feet long, instead of ringing a bell, the bell being used only to announce meals, which were always included in the cost of the ticket.

Writing to Captain Brink, who commanded the "North River" the second year, Fulton says:

CAPTAIN BRINK

SIR: Inclosed is the number of voyages which it is intended the boat should run this season. You may have them published in the Albany papers. As she is strongly made, and every one, except Jackson, under your command, you must insist on each one doing his duty, or turn him on shore and put another in his place. Everything must be kept in order—everything in its place, and all parts of the boat scoured and cleaned. It is not sufficient to tell men to do a thing, but stand over them and make them do it. One pair of good eyes is worth six pairs of hands in a commander. If the boat is dirty or out of order, the fault should be yours. Let no man be idle when there is the least thing to do; and move quickly.

Run no risque of any kind; when you meet or overtake vessels beating or crossing your way, always run under their stern, if there be the least doubt that you cannot clear their head by fifty yards or more.

Give the amount of receipts and expenses every week to the Chancellor.

Your Most Obedient
ROBERT FULTON.

A few items here from Fulton's diary may add to the interest of the story. Under the date of August 10, 1807, he writes:

To a North River man for the lease of an anchor.....\$2
For dishes and plates.....\$4
2 Water Casks.....\$3
and under the fifteenth, when the finishing touches were given, he enters:
Wine, sugar brandy.....\$3
Mr. Johnson, the mason \$40 (for bricking in the boiler which had been put in place by Mr. Maxwell)
To a harpoon gun \$20. Lead for Bullets \$12.

In October, among other entries, we find the following:

Richards, for table.....\$12
Jacob Winkle for mattresses.....\$64.88

As there are no original plans of the first boat, the illustration used here being a picture of the model in the National Museum in Washington, which, while agreeing as to general outline to the descriptions given to the writer by two persons who sailed upon her on the first trip up the river, gives an exaggerated idea as to the extreme length of the boat, it will be worth while to produce the plans of the "Raritan," designed by Robert Fulton in October, 1807. It will be seen that at this early date he had discovered the necessity of changing the lines of the hull, going back to those of the boat he had built in France, although he wrote to Stevens, of Hoboken, in 1808, that "the bows and stern (of a boat) should be sharp to angles of at least sixty degrees. The bow should not be full like sloops, for two reasons: that being long they cannot rise on the waves like sloops but must cut through them and being sharp the resistance is less." This would lead us to conclude, as seems to be intimated by Professor Renwick, that the change in shape was not wholly of his own deductions, but rather in deference to the opinion of others.

But new claimants were coming up all the while, or new men with old claims, and Fulton was harassed on

A CENTURY OF STEAM NAVIGATION

EARLY STEAMBOATS TO SAIL INLAND WATERS FROM NEW YORK CITY





DEVELOPMENT OF THE FIRST CENTURY OF STEAM NAVIGATION
ON THE HISTORIC HUDSON—MAGNIFICENT NEW STEEL
STEAMER "HENDRICK HUDSON," PLYING BETWEEN
NEW YORK AND ALBANY ON THE HUDSON
RIVER DAY LINE AND LICENSED
TO CARRY FIVE THOUSAND
PASSENGERS



A CENTURY OF STEAM NAVIGATION

RARE PRINTS OF SOME OF THE FIRST STEAMBOATS ON THE HUDSON RIVER



Little's Landing, Hudson River, N.Y.



1807—Centennial of Steam Navigation—1907

every hand. In a letter to Eli Whitney, relative to securing injunctions against those who were invading his rights, he writes of his steamboats that he has

"proved their practicability and utility to the world and accommodating the public with a conveyance from New York to Albany, which for elegance, convenience and rapidity is superior to any conveyance in this globe" (April 4, 1811).

The original Fitch patents had come into the hands of Governor Ogden, of New Jersey, and a line of boats was put into operation between New York and Elizabethport, New Jersey, in defiance of Fulton's exclusive charter for navigating boats propelled by steam on any water within the limits of New York state. Ogden appealed to the legislature of the prohibiting state, but before a decision had been given by that body a compromise was made between the contending parties and Ogden was given permission to run his boats for a period of ten years under the Fulton-Livingston franchise. There was a partner, however, Thomas Gibbons, of Georgia, who later built the "Olive Branch," the "United States" and other boats, and he refused to be bound by the terms of the agreement. Counting on the testimony of Dr. William Thornton, the first United States commissioner of patents, he prepared for a fight. Thornton seems always to have been a thorn in Fulton's flesh. Writing to Monroe, Secretary of State under Madison, in relation to his patents he says:

"The case of Dr. Thornton is very simple, if he is an inventor, a genius who can live by his talents, let him do so, but while he is a Clerk in the office of the Secretary of State and paid by the public for his services, he should be forbid to deal in patents, and thereby torment patentees, involving them in vexatious suits, he should have his choice to quit the office or his pernicious practices.

My good Sir, I expect this of you.

I am, with sincere regards

ROBERT FULTON.

DECEMBER 27, 1814."

It will be remembered that during October, 1802, Dr. Thornton had pro-

posed to Major Clayborn, of Washington, that a joint concern be arranged to build steamboats that would use Thornton's boilers, Clayborn's paddle-wheels and Isaac Brigg's engines. In the following December, Fulver Skipworth received a letter in answer to one sent to Fulton in Paris, containing the following suggestion:

"My advice, therefore, is that Mr. Clayborn should make a small model, four feet long and one foot wide and about four inches deep, flat on the ends or pointed to sixty degrees. In such he can place a strong clock spring which by multiplied wheels will turn a crank and give motion to the paddles."

ROBERT FULTON.

PARIS, 12 DECEMBER, 1802."

A recollection of this letter, taken in connection with the activities of Thornton in the patents of Fitch, which seem to have come into his hands, may have led to the writing of the letter quoted above.

While Ogden was yet running the "Sea Horse," a lever-beam-engine boat, seventy-five feet long and fourteen feet wide, between New York and Elizabethtown, Gibbons put on two boats, the "Bellona" and the "Stoudinger," to run from the adjacent ferry-slip in opposition. This was the first entry of Commodore Vanderbilt into the steamboat enterprise of which he afterward became the supreme dictator. In Longworth's New York Directory for 1819 one may see the advertisement of this new line of boats bidding for patronage:

"The Old Union Line for Philadelphia via New Brunswick, Princeton, Trenton, and Bristol 35 miles land carriage. Fare through, 5 Dollars; the Vice President's [Daniel D. Tompkins] Steamboat Nautilus, Captain Deforest, will leave New York every day (Sundays excepted) from Whitehall Wharf, at 11 o'clock A.M. for Staten Island. From her the passengers will be received without delay into the superior and fast sailing steamboat Bellona, Captain Vanderbelt, for Brunswick; from thence—Post Chaises to Trenton, where we lodge, and arrive next morning at 9 o'clock in Philadelphia with the commodious and fast sailing steamboat Philadelphia, Captain Jenkins, in time to take the Old Union Line Baltimore Steamboat."

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When Vanderbilt asked for the loan of ten dollars to purchase a boat for his proposed ferry-line, his mother made the loan conditional on his planting the hardest piece of the farm land with potatoes within a prescribed time. When the day arrived, the potatoes were all in the ground and the boy was demanding his money. Later he was asked by Gibbons to take command of the "Bellona" and after several years in this relation, when he had decided to withdraw and organize a line of his own, Gibbon insisted that he become a partner, or if not, that he should buy out his entire interest and run the line personally. The "Stoudinger" above mentioned and the "Bellona" then became his property, the former being re-named "Mouse-in-the-Mountain."

During the time of Vanderbilt the question of exclusive rights for the use of steam on the waters of New York was taken into court and upon an adverse decision was carried to the Supreme Court of the United States and the famous decision of Chief Justice Marshall was rendered by which the monopoly of seventeen years was destroyed.

The full list of steamboats enrolled at the New York customhouse between 1808, the second enrollment of the "Clermont," and 1820, covers but six vessels, viz: "North River of Clermont," May 14, 1808; "Car of Neptune," 1808, one hundred and seventy-five feet by twenty-four feet by eight feet; "Paragon," November 9, 1811, one hundred and sixty-seven feet by twenty-six feet and ten inches by seven feet and nine inches; "Fire Fly," September, 1812, eighty-one feet by fourteen feet by four feet and five inches; "Richmond," July 6, 1814, one hundred and fifty-four feet by twenty-eight feet and nine inches; "Chancellor Livingston," March 29, 1817, one hundred and fifty-seven feet by thirty-three and a half feet by ten feet. With the exception of the "Chancellor Livingston" the hulls of these vessels, which all belonged to

the North River Steamboat Company, were built by Charles Brownne. Evidently the "Fulton" and the "Raritan" must have been enrolled elsewhere. The "Fulton" was designed by Captain Bunker, who seems soon after the confiscation of the "Hope" and the "Perseverance" to have come into the employ of the North River Steamboat Company, and was looked upon by Fulton almost as incredulously as the people of 1807 had looked upon his strange craft. More than a hundred times he reiterated to Cadwallader Colden, whose entire fortune was involved in her building, the lines being drawn by Elihu Bunker who had full authority as to the arrangement of every little detail, that the boat would be a total failure. (See Doc. 21, House of Representatives, twenty-fifth session, page 104.) When she finally proved to be a success the name of "Fulton" was painted across the stern and a bust in his honor was carried as a figure-head at the bow.

For the "Raritan" there are signed plans by Fulton and a letter as follows:

"As you will have more and greater waves than the North River boat, the wheel guards must be so constructed that the head of the wave shall not strike under them as here delineated; they are 4 ft. from the water; AA, keelsons for the boiler, 8 ft. 6 in. from outside to outside; BB, keelsons for the machinery, 7 ft. from outside to outside; C, hatchway to let in the boilers, 8 ft. 4 in. wide, 21 ft. long. See Figure the 1st.

"ROBT. FULTON.

"John R. Livingston, Esq., Oct. 22, 1807."

The "Chancellor Livingston" was built from designs by Stoudinger, who succeeded Fulton as engineer of the first steam frigate-of-war, after the death of the latter in 1815. Fulton had been attending court at Trenton in reference to his claims as the original inventor of steamboats and in returning to his home at No. 1 State street, New York city, contracted a severe cold from which he died within a few days.



FORERUNNER OF COMFORT IN TRAVEL BY WATER

The "Fulton" of 1814, the first scheduled steamboat on Long Island Sound—At her bow she carried a bust of Fulton and with flags flying she steamed out of New York, applauded by the onlookers



ONE HUNDRED YEARS OF STEAM NAVIGATION

The "C. W. Morse," which is now running on the night route from New York up the Hudson River, is a magnificent specimen of marine architecture at the beginning of this second century of steam navigation — Photographed for The Journal of American History



BURIAL PLACE OF ROBERT FULTON, PROMOTER OF STEAM NAVIGATION
Old Engraving of Trinity Church, New York, where Fulton's remains were placed in the Livingston vault shortly after his death in 1815—They will be removed to the magnificent mausoleum to be erected in his honor

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We have, then, but the "Clermont," "Car of Neptune," "Paragon," "Raritan," "Fire Fly," "Lady Richmond," "Washington," and a small steam ferry-boat and the "Demologos," besides the "New Orleans" and the "Vesuvius" on the Ohio river as having come direct from Robert Fulton. The "Emperor of Russia," which subsequently became the "Connecticut," was not built until a year after his death, which occurred February 24, 1815. It is possible that Fulton may have worked on the plans for this boat which was one hundred and thirty-four feet long, thirty feet wide and nine and a half feet deep. She carried three boilers and had an engine with a thirty-six inch cylinder and a five foot stroke. Her wheels were sixteen feet in diameter with buckets four feet ten inches wide that had a dip of two and a half feet.

The "North River," or "Clermont," ran until 1814, when she was superseded by the "Lady Richmond," but was not broken up till some time during 1825; the "Car of Neptune" was broken up after years of faithful service; the "Paragon," which had been used to tow the "Demologos" from the dock where she was built to Jersey City, struck on a rock while going up the river in 1820 and was so badly damaged that she had to be abandoned; the "Raritan" wore herself out on the river whose name she bore; the "Fire Fly" went onto Long Island Sound and was worn out in service around Providence; the "Lady Richmond" came into the possession of Captain Wiswall and ran for years advertised as "Slow but Sure;" the "Washington" was broken up on the Potomac and the "Demologos" was destroyed by an explosion on board at the Brooklyn navy yard, June 4, 1829, causing the death of twenty-five persons.

When the "Chancellor Livingston," of which we gave a picture in the last number of the JOURNAL OF AMERICAN HISTORY, copied from a rare lithograph of 1824, now owned by Mr. E.

E. Olcott, president of the Hudson River Day Line, came upon the Hudson it was expected that she would make marvelous time, but in this her builders were disappointed. On her trial trip, March 29, 1817, she ran to Newburgh in a "few minutes less than nine hours, of which time the tide was in her favor only three hours. In returning the same distance was run in eight hours and fifteen minutes—the greater part of the time against a flood-tide and a head-wind." It was calculated that she would go to Albany in twenty hours and she did actually succeed in making the trip, December 5, 1817, in eighteen hours. She ran upon the Hudson till 1824 when she was refitted for service on the Sound and later went to the coast of Maine.

While the "Chancellor Livingston" and the "Lady Richmond" were running as the only boats on the line of the North River Steamboat Company some question came up with the Post Office officials relative to the carrying of mail and a notice appeared in the papers stating that "The Post-Master-General, having declined sending mail by the North River Steamboats, excepting to West Point, Newburgh and Hudson, letters and papers will be received on board the boats for Albany and the different places to which the mails were formerly carried. Boxes are provided on board of each boat for the reception of letter, etc., etc."

This was practically the dawning of a new era. That matchless family of engineers at Hoboken had, for personal reasons, refused to enter into competition with the North River Steamboat Company, Chancellor Livingston and Colonel Stevens having been brought into relationship by marriage, but as soon as the old company had been dissolved, they brought onto the river one of their best boats from the Delaware river. It would not be possible to follow the story from this time on to the present in a single article and this must be reserved for

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another time, but the progress that has been made from the time that the "Clermont" started out with a capacity of not more than a hundred passengers and a speed of not more than four, or possibly, five miles an hour, and the days of the "Commerce" and the "Fanny," or the even later, larger and faster "Champlain" may be judged by glancing at the new magnificent "Hendrick Hudson" of the Albany day line or the stately "C. W. Morse" of the People's Line of night boats to-day running between New York and Albany, shown here that it may be seen what progress marks the century of steam navigation.

To show the evolution of the Hudson river day boat a list giving the sizes of prominent steamers built for the business of carrying passengers between New York and Albany since the day of the "Clermont" is herewith appended:

Year Built.	Name of Vessel.	Length Feet.
1807—	Clermont	133
1816—	Chancellor Livingston.....	154
1832—	Erie	180
1836—	Rochester	209
1860—	Daniel Drew.....	251
1864—	Chauncey Vibbard.....	281
1881—	Albany	325
1887—	New York.....	350
1906—	Hendrick Hudson.....	400

Early in the nineteenth century the Hudson river set the pace for speedy and magnificent steamboats. Following the advent of the crudely constructed "Clermont," the first vessel to be elaborately fitted was the "Chancellor Livingston," which appeared on the river in 1816, being the last steamboat designed by Fulton. Since that day the owners of each successive steamer have seemed to vie with one another to produce something greater and grander than the predecessors. Some of these early vessels would be called freaks nowadays. For instance, the "Erie" and "Champlain," built in 1832 for the day line between New York and Albany, were each propelled by two beam engines and carried four boilers and smoke pipes, two on each guard. Despite this apparent super-

fluity of power they were not as speedy as some of the contemporary steamers built some years before their advent.

To-day—at the close of the first century of steam navigation we find on the same "American Rhine" the most palatial river palaces that the world has ever known. Fulton, in his wildest dreams, never conceived such magnificent floating temples, one alone of which could carry away the entire population of any one of a greater proportion of the American communities. Along the deck of a modern steamer, plying the river where Fulton inaugurated steam navigation one hundred years ago, three "Clermonts" could be placed stem to stern, and five "Clermonts" easily carried side by side—fifteen "Clermonts" on its spacious deck.

There are yet so many things to be said of even the early boats and such an undeveloped field of history in the boats of more recent years that I shall not attempt to touch upon the story until some later opportunity when I hope to trace more in detail the several steps by which the original little craft, scarce larger than the railroad coach of to-day, has become the acme of all that is luxurious, safe and convenient as a mode of travel.

The story of ocean navigation, which I outlined in the preceding issue of this journal, is a later-day development from this same "Clermont" and is in itself a chapter of even greater marvels.

At this time when the world is paying homage to Robert Fulton, and through him to the several men who laid the foundation upon which he builded, I cannot refrain from tossing back at the populace the jibe which it threw at steam navigation an hundred years ago:

Jonathan Hulls
With his patent skulls
Invented a machine
To go against wind with steam
But he being an ass
Couldn't bring it to pass
And so was afraid to be seen.

Malabarra Jan 9th 1791

To Doctor Thornton

Dear Sir, having an unfortunate bile and
being altogether so unwell that I shall probably not be able to
go out of the house in a fortnight I shall be happy to have some
conversation with you on your steam boat inventions and
experience. although I do not see by what means a boat
containing One hundred tons of merchandise can be driven
six miles an hour in still water. Yet when you exert your
perfect confidence in such success there may be something
more in your combinations than I am aware of as such
success would be of infinite national importance if you
feel disposed on the principles of patriotism to give the money
every aid at the same time to make such an arrangement
as would secure you ample fortune. To prove your
principles by practice it has occurred to me that one of
two things may be done either that you find some one
to join you with funds to build the boat and if you
succeed to run 6 miles an hour in still water with
One hundred Tons of merchandise I will contract to
to reimburse the cost of the boat and give you one hundred
and fifty thousand dollars for your patents, or if you
can convince me of the success by drawings or demonstrations
I will join you in the expenses and profits, please to
think of this and have the goodness to let me see or hear
from you as soon as possible

I am Sir your most Obedient

Robert Fulton

1861/49

Robert Taylor

Bellevue 1000 St

and the state of New York

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Pamphlet
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Gaylord Bros., Inc.
Makers
Syracuse, N. Y.
PAT. JAN 21, 1908

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